STIC Search March 1, 2007

NON-PATENT LITERATURE

[File 155] **MEDLINE(R)** 1950-2007/Feb 27
[File 5] **Biosis Previews(R)** 1926-2007/Feb W4
[File 73] **EMBASE** 1974-2007/Feb 28
[File 34] **SciSearch(R) Cited Ref Sci** 1990-2007/Feb W4
[File 434] **SciSearch(R) Cited Ref Sci** 1974-1989/Dec
[File 94] **JICST-EPlus** 1985-2007/Mar W1
[File 144] **Pascal** 1973-2007/Feb W3
[File 35] **Dissertation Abs Online** 1861-2007/Feb
[File 65] **Inside Conferences** 1993-2007/Mar 01

Set	Items	Description
S1	21385	S (CORNEA OR CORNEAL)(1N)EPITHELIUM
S2	2476	S BOWMAN? ?(1W)(MEMBRANE? ? OR LAYER? ?) OR (ANTERIOR()(LIMITING OR ELASTIC)()LAMINA)
S3	40	S DEEPITHELIALI?ED()CORNEA
S4	304544	S LENS OR LENSES
S5	62	S S1 AND S2 AND S4
S6	13	S S1(3N)S2 AND S4
S7	9	RD (unique items)
S8	**9**	**SORT S7/ALL/PY,A**
S9	38420	S (GRAFT??? OR IMPLANT?)(S)S4
S10	7	S S5 AND S9
S11	**3**	**S S10 NOT S6**
S12	0	S S3 AND S9
S13	4	S S3 AND S4
S14	4	S S13 NOT (S6 OR S10)
S15	**1**	**RD (unique items)**
S16	46	S S5 NOT (S6 OR S10 OR S13)
S17	29	RD (unique items)
S18	3	S S17/2003:2004
S19	2	S S17/2005
S20	4	S S17/2006:2007
S21	20	S S17 NOT S18:S20
S22	**20**	**SORT S21/ALL/PY,A**

8/7/1 (Item 1 from file: 5)
Biosis Previews(R)
(c) 2007 The Thomson Corporation. All rights reserved.
0001080374 **Biosis No.:** 19603500062813
Standing potentials of the frog's eye
Author: DZENDOLET ERNEST
Journal: JOUR OPTICAL SOC AMER 50 ((6)): p 551-555 1960 1960
Document Type: Article
Record Type: Abstract
Language: Unspecified
Abstract: With the in-place frog's eye, the potential difference between the center of the **corneal** surface and the rest of the **cornea** reached a maximum of about -15 mv at the corneoscleral junction. This large a **corneal** potential difference may be the immediate source of the potential presumably utilized in the electro-oculogram, rather than the **cornea**-to-fundus potential. A slightly injured section of the **cornea** and also the aqueous humor had a potential of approximately + 15 mv with reference to the **corneal** center. These two potentials appeared to be separated by an insulating layer, presumably the interface between the **corneal epithelium** and **Bowman** s **membrane**. The potential difference between the **corneal** center and the front interior part of the **lens** was about - 33 mv, and about - 47 mv for the back. The vitreous side of the retina was about - 2 mv. Within the retina, transient steps of about - 50 mv occurred. These were not the same shape or in

the same order from frog to frog, or from one place in the same retina to another, except for one. This was a step of - 40 to - 60 mv which was presumably Brindley's R membrane.
ABSTRACT AUTHORS: Author

8/7/3 (Item 3 from file: 73)
Fulltext available through: USPTO Full Text Retrieval Options ScienceDirect
EMBASE
(c) 2007 Elsevier B.V. All rights reserved.
03685006 **EMBASE No:** 1988134442
Clinico-pathological study of 4 removed kerato-lens lenticles
ETUDE HISTOLOGIQUE DE 4 LENTICULES D'EPIKERATOPLASTIE. CORRELATIONS ANATOMO-CLINIQUES
Mader P.; Colin J.; Baikoff G.; Volant A.; Ertus
Service d'Ophtalmologie, Centre Hospitalier Regional, 29200 Brest France
Journal Francais d'Ophtalmologie (J. FR. OPHTALMOL.) (France) 1988 , 11/2 (143-149)
CODEN: JFOPD **ISSN:** 0181-5512
Document Type: Journal
Language: FRENCH **Summary Language:** ENGLISH
Four removed kerato-**lens** lenticles (1 for keratoconus, 1 for aphakia, and 2 for myopia) have been studied histologically. The reasons for removal of the lenticles were poor visual acuity in spite of a satisfactory anatomic result in three cases and epithelialization of the interface in one case. The **epithelium** presented modifications, particularly with exoserosis of basal cells and irregularities of thickness. The **Bowman** membrane was irregular and interrupted in some parts. The **corneal** stroma had few cells; the keratocytes were observed in the periphery of the lenticle and near the interface.

8/7/5 (Item 5 from file: 73)
Fulltext available through: custom link USPTO Full Text Retrieval Options ScienceDirect
EMBASE
(c) 2007 Elsevier B.V. All rights reserved.
05894375 **EMBASE No:** 1994303749
Recurrent corneal erosion in cystinosis
Elder M.J.; Astin C.L.K.
Moorfields Eye Hospital, City Rd,London EC1V 2PD United Kingdom
Journal of Pediatric Ophthalmology and Strabismus (J. PEDIATR. OPHTHAL. STRABISMUS) (United States) 1994 , 31/4 (270-271)
CODEN: JPOSD **ISSN:** 0191-3913
Document Type: Journal ; Article
Language: ENGLISH

8/7/6 (Item 6 from file: 155)
Fulltext available through: ScienceDirect (Elsevier) USPTO Full Text Retrieval Options ScienceDirect
MEDLINE(R)
(c) format only 2007 Dialog. All rights reserved.
13721087 **PMID:** 11978471
Bipseudophakia: clinicopathological correlation of a dropped lens.
Izak Andrea M; Apple David J; Werner Liliana; Trivedi Rupal H; Pandey Suresh K; Macky Tamer A; Schmidbauer Josef M; Marsh Peter
Center for Research on Ocular Therapeutics and Biodevices, Storm Eye Institute, Medical University of South Carolina, Charleston, South Carolina 29425-5536, USA.
Journal of cataract and refractive surgery (United States) May 2002 , 28 (5) p874-82 , **ISSN:** 0886-3350--Print **Journal Code:** 8604171
Publishing Model Print; Comment in J Cataract Refract Surg. 2003 Jan;29(1) 4; author

reply 4; Comment in PMID 12551643; Comment in J Cataract Refract Surg. 2003 Oct;29(10):1853; Comment in PMID 14604699
Document type: Case Reports; Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
PURPOSE: To examine postmortem human globes containing an anterior chamber and a posterior chamber intraocular **lens** (IOL). SETTING: Center for Research on Ocular Therapeutics and Biodevices, Storm Eye Institute, Charleston, South Carolina, USA. METHODS: The globes were sectioned at the equator, and the anterior and posterior segments were macroscopically examined. Gross photographs were taken using the Miyake-Apple posterior photographic technique. Histological sections were cut and stained with hematoxylin and eosin, periodic acid-Schiff, and Masson's trichrome. RESULTS: Histopathological findings included a large Soemmering's ring, a tear in the posterior capsule, 1 haptic of the anterior chamber IOL displaced into the iridectomy, thin and atrophic **corneal epithelium**, separation of **Bowman's layer** and stroma by fibrovascular tissue, and atrophy of the retinal ganglion cell layer and nerve fiber layer. CONCLUSION: In cases in which secondary IOL implantation is indicated, removing the dislocated IOL appears to be a reasonable choice.
Record Date Created: 20020429
Record Date Completed: 20020625

11/7/3 (Item 3 from file: 73)
Fulltext available through: ScienceDirect (Elsevier) USPTO Full Text Retrieval Options ScienceDirect
EMBASE
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05119763 **EMBASE No:** 1992259979
Clinical and histopathologic changes in the host cornea after epikeratoplasty for keratoconus
Rodrigues M.; Nirankari V.; Rajagopalan S.; Jones K.; Funderburgh J.
Department of Ophthalmology, Medical School Teaching Facility, University of Maryland, 10 S. Pine St.,Baltimore, MD 21201 United States
American Journal of Ophthalmology (AM. J. OPHTHALMOL.) (United States) 1992 , 114/2 (161-170)
CODEN: AJOPA **ISSN:** 0002-9394
Document Type: Journal ; Conference Paper
Language: ENGLISH **Summary Language:** ENGLISH
Five consecutive patients underwent epikeratoplasty for keratoconus. Postoperatively, four patients had poor visual acuity (average, 20/200) secondary to folds in Descemet's membrane and interface scarring. Two underwent penetrating keratoplasty eight months later. Histopathologic examination of the host **corneas** and the overlying lenticules disclosed epithelial irregularity and subepithelial fibrosis. The host **corneas** showed folds in Descemet's membrane and focal posterior stromal fibrosis. Electron microscopy disclosed breaks in **Bowman's membrane** with irregular collagen, posterior aggregates of amorphous material, and focal endothelial degeneration. The fifth patient had **graft** ulceration and vascularization that required removal of the lenticule. She underwent a penetrating keratoplasty five months later and histopathologic examination demonstrated persistent folds in Descemet's membrane. Immunostaining of specimens from three cases disclosed a reduced expression of sulfated epitopes of keratan sulfate and an increase in sulfated dermatan-sulfate in the lenticule and host **corneal** tissues. These alterations in stromal proteoglycans are characteristic of stromal scars and keratoconus and provide evidence of pathologic processes in the **graft** tissue. Because of potential complications, epikeratoplasty should be considered only for those patients who are unsuitable candidates for contact **lenses** or penetrating keratoplasty.

15/7/1 (Item 1 from file: 155)
Fulltext available through: ScienceDirect (Elsevier) USPTO Full Text Retrieval Options ScienceDirect
MEDLINE(R)
(c) format only 2007 Dialog. All rights reserved.
13616192 **PMID:** 11821223
Acanthamoeba keratitis after photorefractive keratectomy.
Kaldawy Roger M; Sutphin John E; Wagoner Michael D
Cornea and External Disease Division, Department of Ophthalmology, Boston University Medical Center, Boston, Massachusetts, USA. Rogerkaldawy@bmc.org
Journal of cataract and refractive surgery (United States) Feb 2002 , 28 (2) p364-8 , **ISSN:** 0886-3350--Print **Journal Code:** 8604171
Publishing Model Print
Document type: Case Reports; Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
A 37-year-old women developed severe suppurative keratitis immediately after having photorefractive keratectomy in her left eye. The keratitis was unresponsive to intensive topical antibiotic agents and topical and systemic steroids. Although the differential diagnosis included nonmicrobial and fungal keratitis, the clinical course and confocal microscopy suggested, and subsequent histopathologic examination confirmed, a diagnosis of Acanthamoeba keratitis. The amebic contamination probably resulted from exposure of the **deepithelialized cornea** to contaminated freshwater in a northern Wisconsin marsh. This case emphasizes the importance of encouraging patients with epithelial defects and bandage soft contact **lenses** to avoid exposure to contaminated freshwater until reepithelialization is complete.
Record Date Created: 20020131
Record Date Completed: 20020311

22/6/1 (Item 1 from file: 5)
0001903115 **Biosis No.:** 19684900061757
The Golgi apparatus in the eye tissues [Engl. and Russ. sum.]
Original Language Title: Aparat golgiego w tkankach oka [Engl. and Russ. sum.]
1965

22/6/2 (Item 2 from file: 73)
00119482 **EMBASE No:** 1974109584
Immunofluorescence localization of lens crystallins and serum proteins in chick intraocular tissues
Publication Date: 1973

22/6/3 (Item 3 from file: 73)
00546730 **EMBASE No:** 1976102349
Demonstration of lens proteins and serum proteins in the intraocular tissues of the chicken by means of immunofluorescence
Publication Date: 1975

22/6/4 (Item 4 from file: 5)
05346722 **Biosis No.:** 197865007709
OBSERVATIONS ON THE MORPHOLOGY OF THE DEVELOPING PRIMATE CORNEA EPITHELIUM ITS INNERVATION AND ANTERIOR STROMA
1977

22/6/5 (Item 5 from file: 5)
06315069 **Biosis No.:** 198172049020
OCULAR MANIFESTATIONS OF CONRADI AND ZELLWEGER SYNDROMES
1981

22/6/8 (Item 8 from file: 155)
06025531 **PMID:** 6186543
Monoclonal antibody analysis of ocular basement membranes during development.
Jan 1983

22/6/18 (Item 18 from file: 155)
12538380 **PMID:** 10487426
Contact lens-induced peripheral ulcers with extended wear of disposable hydrogel lenses: histopathologic observations on the nature and type of corneal infiltrate.
Sep 1999

22/7/6 (Item 6 from file: 155)
Fulltext available through: USPTO Full Text Retrieval Options ScienceDirect
MEDLINE(R)
(c) format only 2007 Dialog. All rights reserved.
05973737 **PMID:** 7162077
[Corneal changes due to HEMA lenses]
Hornhautveranderungen verursacht durch HEMA-Linsen.
Rubey F; Harrer S
Klinische Monatsblatter fur Augenheilkunde (GERMANY, WEST) Nov 1982 , 181 (5) p344-5 , **ISSN:** 0023-2165--Print **Journal Code:** 0014133
Publishing Model Print
Document type: Journal Article ; English Abstract
Languages: GERMAN
Main Citation Owner: NLM
Record type: MEDLINE; Completed
The topic of this paper is the appearance of palisade-shaped, soft, gray opacities of the **corneal epithelium** in wearers of HEMA **lenses**. The opacity emanates from the limbus and is located under the upper eyelid. The paper also deals with the formation of folds in **Bowman's membrane**. They are approximately horizontal, are usually located within the lid-fissure and occur in combination with large-scale opacity of the **corneal epithelium** in the upper third of the **cornea**. The differential diagnosis of well-known **corneal** changes is also discussed.
Record Date Created: 19830407
Record Date Completed: 19830407

22/7/7 (Item 7 from file: 155)
Fulltext available through: USPTO Full Text Retrieval Options ScienceDirect
MEDLINE(R)
(c) format only 2007 Dialog. All rights reserved.
05830321 **PMID:** 7102810
Contact lens-induced corneal epithelial injury.
Bergmanson J P; Chu L W
American journal of optometry and physiological optics (UNITED STATES) Jun 1982 , 59 (6) p500-6 , **ISSN:** 0093-7002--Print **Journal Code:** 0417614
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed

Rigid contact **lenses** were fitted on primates to study the subsequent **corneal epithelial** injury. This trauma was compared to **corneal** abrasions produced by a blunt object. The traumatic abrasion caused a rupture of the basal cells, which were identified as the most vulnerable part of the **corneal epithelium** for such an injury. The internal plasmalemma of the basal cell remained adherent to the epithelial basement membrane due to the strong hemidesmosomes along the cell membrane. Contact **lenses** were capable of producing similar injuries which did not penetrate the basement membrane and therefore did not involve the **anterior limiting lamina** (**Bowman's membrane**). We concluded that contact **lenses** produce a self-limiting trauma and even a severe case of contact **lens** overwear, although it causes deep **corneal** abrasions, seldom results in permanent scar formation.
Record Date Created: 19820924
Record Date Completed: 19820924

22/7/10 (Item 10 from file: 35)
Dissertation Abs Online
(c) 2007 ProQuest Info&Learning. All rights reserved.
01146049 ORDER NO: NOT AVAILABLE FROM UNIVERSITY MICROFILMS INT'L.
CAT AND MONKEY CORNEA AS MODELS FOR EXTENDED HYDROGEL CONTACT LENS WEAR IN HUMANS (CONTACT LENS)
Author: MADIGAN, MICHELE C.
Degree: PH.D.
Year: 1989
Corporate Source/Institution: UNIVERSITY OF NEW SOUTH WALES (AUSTRALIA) (0423)
Source: Volume 5110B of Dissertations Abstracts International.
PAGE 4787 .

The cat and monkey **cornea** were investigated as possible models for human extended contact **lens** wear. Compared to the monkey and human **cornea**, the cat **cornea** was thicker and of parallel thickness. The cat **cornea** also had a thicker **epithelium**; an indistinct **Bowman's layer** and proportionately thicker Descemet's layer. The structure of the monkey **cornea** was similar to the human **cornea**.

Following extended contact **lens** wear, the cat demonstrated **corneal** oedema, refractile **corneal epithelium** changes, reduced oxygen uptake rate and reduced epithelial adhesion evidenced by areas of epithelial loss associated with contact **lens** wear. The cat endothelium was unaffected by extended contact **lens** wear. The monkey **cornea** sometimes displayed areas of epithelial loss with extended contact **lens** wear, and as in the human, also developed endothelial polymegethism and pleomorphism. Reversible endothelial changes associated with contact **lens** wear and anterior eye inflammation were also observed in the monkey **cornea**. In both animal models, the **epithelium** was most affected by contact **lens** wear, displaying reduced microvilli, decreased layers of cells, loss of normal columnar basal cell shape and slight intra- and intercellular oedema. Deep stromal vascularisation was observed in several monkey **corneas**, the new vessels frequently being associated with leucocytes. An association between leucocytes and active keratocytes was also noted. Apoptotic involution of neutrophils was also noted in one **cornea**. The association of leucocytes, active keratocytes and vessels was also noted in a cat bacterial **corneal** ulcer.

No significant difference was found between cat **lens**-wearing and control eye epithelial wound healing rates, although **lens**-wearing **epithelium** was significantly easier to remove by scraping. Ultrastructurally, there were significantly less hemidesmosomes (HDs) in the **lens**-wearing eye. The basement membrane (BM) lamina densa remained intact following scraping, indicating anchoring fibrils were probably unaffected. Oedematous areas were not visible between basal cells and the BM. The observed loss of epithelial adhesion in **lens**-wearing eyes may thus be explained by a significant reduction in HD density. This compromised **epithelium** may be involved in development of contact **lens**-related **corneal** infections.

Overall, the cat **cornea** would appear to be a suitable model for the human **corneal epithelium** during extended contact **lens** wear; the monkey **cornea** providing a more suitable

model for the human **corneal** endothelium.

22/7/12 (Item 12 from file: 155)
Fulltext available through: USPTO Full Text Retrieval Options ScienceDirect
MEDLINE(R)
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09479997 **PMID:** 1483124
Simplified microsurgical method of therapy for recurrent corneal erosion.
Vegh M
Department of Ophthalmology, Albert Szent-Gyorgyi Medical University, Hungary.
German journal of ophthalmology (GERMANY) 1992 , 1 (3-4) p135-8 , **ISSN:** 0941-2921--Print **Journal Code:** 9206441
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Recurrent **corneal** erosion can develop after superficial trauma and can prove unresponsive to traditional forms of conservative treatment. Over the past 5 years, we have treated 17 unilateral cases with our own surgical technique. The following method was applied for treatment: under an operating microscope the separated **corneal epithelium** was excised with microforceps and Vannas microscissors. After this, the underlying hypertrophic basement membrane was peeled off **Bowman's membrane** with a foreign body needle and excised at the rim with Vannas microscissors. The site of hyalin-like formation adhering on the area of **Bowman's membrane** was next carefully scraped with the foreign body needle. Following this procedure, a dressing **lens** was fitted to the eye. In 2 cases recurrences occurred, but the healing process was successful in these cases after treatment. With this simplified microsurgical procedure, the recurrent **corneal** erosion was curable. Through the application of dressing **lenses**, the danger of recurrence was eliminated, and the healing process was considerably shortened.
Record Date Created: 19930216
Record Date Completed: 19930216

22/7/13 (Item 13 from file: 73)
Fulltext available through: USPTO Full Text Retrieval Options ScienceDirect
EMBASE
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05749054 **EMBASE No:** 1994147081
Glued-on hard contact lenses as an artificial epithelium in most severe eye burns
DIE KONTAKTLINSE ALS KUNSTLICHES EPITHEL BEI VERATZUNGEN
Kuckelkorn R.; Reim M.
Augenklinik, Medizinische Fakultat, RWTH, Pauwelsstrasse 30,D-52057 Aachen Germany
Contactologia (CONTACTOLOGIA) (Germany) 1994 , 16/2 (74-81)
CODEN: CNTCD **ISSN:** 0171-9599
Document Type: Journal ; Short Survey
Language: GERMAN **Summary Language:** GERMAN; ENGLISH
The procedure to applicate a hard contact **lens** in patients with abnormal or damaged **corneal epithelium** was established by Dohlman and Kaufman 25 years ago. After removal of the **corneal epithelium** the contact **lens** of polymethylmethacrylate (PMMA) is attached to **Bowman's membrane** with cyanoacrylate adhesive. Most of the **corneal** diseases are now sucessfully treated by the use of soft hydrophilic contact **lenses**. The application of a glued-on contact **lens** is now restricted to the treatment of progressive **corneal** ulceration, mainly in severe chemical and thermal burns. The major problem in these cases remains the inability of the **epithelium** to regenerate on the **cornea**. New therapeutic approaches could not solve the problem of primary epithelial regeneration and prevention

of ulceration. The use of the artificial **epithelium** prevents the **corneal** stroma from infiltration with leukocytes and their destroying enzymatic activities. The anti-inflammatory treatment with corticosteroids can be continued, until the eye is free of irritation and a penetrating keratoplasty can be performed.

22/7/14 (Item 14 from file: 34)
Fulltext available through: ScienceDirect (Elsevier) USPTO Full Text Retrieval Options ScienceDirect
SciSearch(R) Cited Ref Sci
(c) 2007 The Thomson Corp. All rights reserved.
03046362 **Genuine Article#:** MZ314 **Number of References:** 21
SPECULAR MICROSCOPIC EVALUATION OF THE CORNEAL EPITHELIUM AFTER EXCIMER-LASER PHOTOREFRACTIVE KERATECTOMY
Author: AMANO S; SHIMIZU K; TSUBOTA K
Corporate Source: MUSASHINO RED CROSS HOSP,DIV OPHTHALMOL,1-26-1 KYONANCHO/MUSASHINO/TOKYO 180/JAPAN/; MUSASHINO RED CROSS HOSP,DIV OPHTHALMOL/MUSASHINO/TOKYO 180/JAPAN/; TOKYO DENT COLL,DEPT OPHTHALMOL/CHIBA//JAPAN/
Journal: AMERICAN JOURNAL OF OPHTHALMOLOGY , 1994 , V 117 , N3 (MAR 15) , P 381-384
ISSN: 0002-9394
Language: ENGLISH **Document Type:** ARTICLE
Abstract: Nineteen eyes underwent photorefractive keratectomy to correct myopia. Using the specular microscope, we observed the central **corneal epithelium** of each eye preoperatively and at one, three, and six months after surgery. A normal epithelial pattern was observed in 18 eyes (94.7%) at one and three months and in 19 eyes (100%) at six months after surgery. There was no statistically significant difference in the pre- and postoperative mean cell area and corresponding coefficient of variation. These results suggest that the destruction of **Bowman's layer** produced by photorefractive keratectomy does not affect the morphologic characteristics of the most superficial layer of the **corneal epithelium**.

22/7/15 (Item 15 from file: 5)
Fulltext available through: USPTO Full Text Retrieval Options ScienceDirect
Biosis Previews(R)
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14186899 **Biosis No.:** 199799820959
Examination of the human cornea with the confocal microscope after excimer-laser photorefractive keratectomy
Author: Boehnke Matthias (Reprint); Schipper Isaak; Thaer Andreas
Author Address: Univ.-Augenklin., CH-3010 Bern, Switzerland**Switzerland
Journal: Klinische Monatsblaetter fuer Augenheilkunde 211 (3): p 159-167 1997 1997
ISSN: 0023-2165
Document Type: Article
Record Type: Abstract
Language: German
Abstract: Background. In photorefractive keratectomy (PRK) procedures, a variable superficial central **corneal** scar formation ("haze") can be observed following removal of **corneal** stromal tissue. Today, a near to normal slit lamp finding is observed one year postoperatively in most patients. We employed the slit scanning confocal microscope to study the **corneal** morphology years after PRK. Methods. We selected 5 patients, who had been subjected to unilateral photorefractive surgery 1-3 years earlier and who had no **corneal** haze upon slit lamp examination. As controls we investigated the non - treated **corneas** of these patients, 5 healthy controls and 5 contact **lens** wearers. The confocal microscopic investigation was performed with 25x, 40x and 50x water immersion objectives. The video signal was synconized with the slit scan and stored on S-VHS video tape. By reviewing the videos in the single frame mode, all **corneal** layers could be qualitatively

evaluated. Results. Some minor abnormalities were observed in the **epithelium** of all PRK - treated eyes. In the epithelial basal cell layer some round structures of about the size of a cell with high reflectivity were observed. These changes were only occasionally found in contact **lens** wearers, but riot in non treated or normal control eyes. **Bowman's layer** was absent in the PRK treated eyes, instead, a fine layer of collagen tissue of increased reflectivity was found. The subepithelial **corneal** nerve plexus was normal in all non - treated eyes, whereas in the PRK - treated **corneas** nerve shape and branching pattern were changed to quite an extent. In the anterior stroma the keratocyte nucleus patterns indicated an increased cell density and irregular spacing, whereas a normal keratocyte pattern was found in the deeper stromal layers. A significant finding was the observation of rod and needle shaped highly reflective structures, which were limited to the area of the excimer laser keratectomy with a predominance in the anterior stroma. These longitudinal structures themselves consisted of linearly arranged highly reflective granules, which sometimes also were found as isolated dots within keratocyte processes. In long term contact **lens** wearers a comparable granule type, however with a singular and scattered arrangement, was variably found in all **corneal** regions and layers. In normal controls none of these findings were present. In contact **lens** wearers and PRK patients with a contact **lens** history, the **corneal** endothelium showed some degree of polymegathisms but no other specific findings. Discussion. Up to now, refractive surgery with the excimer laser has been reported to elicit no other stromal changes but a mild fibroblast activation with subsequent scar tissue formation. In clinically clear **corneas** after PRK, we have described a new type of stromal deposit observed 1-3 years after surgery. As acute wound healing responses might have been expected to have passed at this point, this highly reflective stromal deposit can be assumed to consist of linear keratocyte processes filled with some highly reflective (degenerative?) matter as well as a corresponding extracellular stromal deposit arranged parallel to the stromal collagen bundles. Possibly, these stromal deposits represent the result of an inflammatory or degenerative stromal response resulting in the formation of stromal lipofuscein deposits. Visual acuity was not impaired in the patients investigated in this study. As these stromal deposits appear to be persisting years after surgery and possibly are irreversible in nature, a long term effect on the **corneal** physiology and function should carefully be monitored.

22/7/19 (Item 19 from file: 5)
Biosis Previews(R)
(c) 2007 The Thomson Corporation. All rights reserved.
16138782 **Biosis No.**: 200100310621
The effects of clinical patching techniques on corneal re-epithelialization
Author: Fowler A M (Reprint); Roberts B C; Zarovnaya E L; Vanderveldt S L (Reprint) ; Lee S; Fowler W C (Reprint)
Author Address: Ophthalmology Dept., Duke Univ. Medical Center, Durham, NC, USA**USA
Journal: IOVS 42 (4): p S890 March 15, 2001 2001
Medium: print
Conference/Meeting: Annual Meeting of the Association for Research in Vision and Ophthalmology Fort Lauderdale, Florida, USA April 29-May 04, 2001; 20010429
Document Type: Meeting; Meeting Abstract
Record Type: Citation
Language: English

22/7/20 (Item 20 from file: 73)
Fulltext available through: ScienceDirect (Elsevier) USPTO Full Text Retrieval Options ScienceDirect
EMBASE
(c) 2007 Elsevier B.V. All rights reserved.
12232306 **EMBASE No**: 2003342691

Lamellar or surface?
Kohnen T.
Journal of Cataract and Refractive Surgery (J. CATARACT REFRACTIVE SURG.) (United States) 2002 , 28/8 (1305-1306)
CODEN: JCSUE **ISSN:** 0886-3350
Document Type: Journal ; Editorial
Language: ENGLISH
Number Of References: 7

[File 9] **Business & Industry(R)** Jul/1994-2007/Feb 28
[File 149] **TGG Health&Wellness DB(SM)** 1976-2007/Feb W2
[File 148] **Gale Group Trade & Industry DB** 1976-2007/Feb 20
[File 135] **NewsRx Weekly Reports** 1995-2007/Feb W4
[File 441] **ESPICOM Pharm&Med DEVICE NEWS** 2007/Aug W4
[File 636] **Gale Group Newsletter DB(TM)** 1987-2007/Feb 28
[File 98] **General Sci Abs** 1984-2007/Mar

Set	Items	Description
S1	406	S (CORNEA OR CORNEAL)(1N)EPITHELIUM
S2	111	S BOWMAN? ?(1W)(MEMBRANE? ? OR LAYER? ?) OR (ANTERIOR()(LIMITING OR ELASTIC)()LAMINA)
S3	1	S DEEPITHELIALI?ED()CORNEA
S4	74838	S LENS OR LENSES
S5	0	S S3(S)S4
S6	4	S S1(S)S2(S)S4
S7	**4**	**RD (unique items)**

7/3,K/1 (Item 1 from file: 149)
TGG Health&Wellness DB(SM)
(c) 2007 The Gale Group. All rights reserved.
02930302 **Supplier Number:** 88578832 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Common ophthalmologic emergencies: a systematic approach to evaluation and management.
Cuculino, Gregory P.
Emergency Medicine Reports , 23 , 13 , 163(15)
June 17 , 2002
Publication Format: Newsletter
ISSN: 0746-2506
Language: English
Record Type: Fulltext **Target Audience:** Professional
Word Count: 12752 **Line Count:** 01085
...opened their eyelids upon waking. This is caused by a weakness in the attachment to **Bowman's membrane** in the previously injured area. Upon waking, the eyelids pull off the **corneal epithelium** over the weakened area, resulting in a **corneal** abrasion and pain. Patients at risk for...
...are those presenting with large abrasions or those abrasions caused by fingernails or hard contact **lenses**. (20)
Corneal Foreign Bodies. The subjective sensation of a **corneal** foreign body is one of...

7/3,K/2 (Item 2 from file: 149)
TGG Health&Wellness DB(SM)
(c) 2007 The Gale Group. All rights reserved.
01698526 **Supplier Number:** 19323776 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Long-term restoration of damaged corneal surfaces with autologous cultivated corneal epithelium.(Early Reports)
Pellegrini, Graziella; Traverso, Carlo E.; Franzi, Adriano Tito; Zingirian, Mario; Cancedda, Ranieri; De Luca, Michele
The Lancet , v349 , n9057 , p990(4)
April 5 , 1997
Publication Format: Magazine/Journal
ISSN: 0099-5355
Language: English
Record Type: Fulltext; Abstract **Target Audience:** Professional
Word Count: 2980 **Line Count:** 00249
...monoclonal antibody. A uniform positive staining was present (figure

2D), as described for normal **corneal epithelium**.10
Patient 2 was a man aged 39 years who presented with an alkali burn...

7/3,K/3 (Item 3 from file: 149)
TGG Health&Wellness DB(SM)
(c) 2007 The Gale Group. All rights reserved.
01475052 **Supplier Number:** 14925530 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Lamellar keratoplasty after trabeculectomy with 5-fluorouracil.
Hayashi, Mieko; Ibaraki, Nobuhiro; Tsuru, Tadahiko
American Journal of Ophthalmology , v117 , n2 , p268(2).
Feb 15 , 1994
Publication Format: Magazine/Journal
ISSN: 0002-9394
Language: English
Record Type: Fulltext **Target Audience:** Professional
Word Count: 515 **Line Count:** 00046
...performed in the 26th month. Histopathologic study (Fig. 2) disclosed dense fibrous proliferation between the **corneal epithelium** and **Bowman's layer**. The graft stayed epithelialized only for a short period, and epithelial defects persisted. A bandage soft contact **lens** was placed. The graft became slightly cloudy and visual acuity was 20/60 at the...

FOREIGN AND INTERNATIONAL PATENTS

[File 350] **Derwent WPIX** 1963-2006/UD=200714
[File 347] **JAPIO** Dec 1976-2006/Oct(Updated 070201)

Set	Items	Description
S1	271	S (CORNEA OR CORNEAL)(1N)EPITHELIUM
S2	81	S BOWMAN? ?(1W)(MEMBRANE? ? OR LAYER? ?) OR (ANTERIOR()(LIMITING OR ELASTIC)()LAMINA)
S3	2	S DEEPITHELIALI?ED()CORNEA
S4	387610	S LENS OR LENSES
S5	**8**	**S S1 AND S2 AND S4**
S6	2	S S3 AND S4
S7	**1**	**S S6 NOT S5**

5/5,K/5 (Item 5 from file: 350)
Derwent WPIX
(c) 2007 The Thomson Corporation. All rights reserved.
0013625983 *Drawing available*
WPI Acc no: 2003-721545/200368
Related WPI Acc No: 2002-268928
XRAM Acc no: C2003-198439
XRPX Acc No: N2003-576965

Epithelium separating or lifting device includes epithelium delaminator that applies mechanical force beneath epithelium to separate epithelium from stroma without cutting the stroma

Patent Assignee: PEREZ E (PERE-I)
Inventor: PEREZ E
Patent Family (7 patents, 101 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2003061518	A2	20030731	WO 2003US1549	A	20030117	200368	B
US 20030220653	A1	20031127	US 2000618580	A	20000718	200378	E
			WO 2001US22633	A	20010718		
			US 2002350003	P	20020117		
			US 2002393305	P	20020701		
			US 2002408226	P	20020903		
			US 2003346664	A	20030117		
AU 2003207603	A1	20030902	AU 2003207603	A	20030117	200422	E
EP 1474084	A2	20041110	EP 2003705818	A	20030117	200473	E
			WO 2003US1549	A	20030117		
JP 2005515019	W	20050526	JP 2003561464	A	20030117	200535	E
			WO 2003US1549	A	20030117		
MX 2004006954	A1	20050401	WO 2003US1549	A	20030117	200571	E
			MX 20046954	A	20040716		
CN 1642499	A	20050720	CN 2003806348	A	20030117	200575	E

Priority Applications (no., kind, date): US 2003346664 A 20030117; WO 2001US22633 A 20010718; US 2000618580 A 20000718; US 2002393305 P 20020701; US 2002350003 P 20020117; US 2002408226 P 20020903

Alerting Abstract WO A2

NOVELTY - An **epithelium** separating or lifting device comprises an **epithelium** delaminator that applies a mechanical force beneath the **epithelium** (202) to separate the **epithelium** from a stroma (204) without cutting the stroma.

USE - For separating or lifting **epithelium** from an eye having a **cornea** with **epithelium** and a stroma (claimed).

ADVANTAGE - The **epithelium** delaminator of the inventive device can create an epithelial flap that may be re-placed or positioned variously over an implant such as an ocular **lens**

or over the site of a refractive surgical procedure, e.g. Laser Assisted Subepithelial Keratomileusis.
DESCRIPTION OF DRAWINGS - The figure is a side, cross-sectional view of a wire separating the **epithelium** from the **corneal** stroma.
200 Wire
202 **Epithelium**
204 Stroma
Technology Focus ...
...the force by injecting a gel between the **epithelium** and the anterior surface. An ocular **lens** comprising a synthetic polymer is placed on the stroma. The chemical composition may also comprise...
Original Abstracts:
...ophthalmology; the devices and methods relate variously to separating or lifting **corneal epithelium** from the **eye** preferably in a substantially continuous layer, placing a **lens** or other suitable **ocular** or medical device beneath the epithelial membrane, and to the resulting structures formed by those... ... surface in the eye between the **epithelium** and the **corneal** stroma (**Bowman**'s membrane), specifically **separating** in **the** region of the lamina lucida. The separator or dissector may have a structure that rolls... ... a refractive procedure or after placement of an ocular **lens** (or other subepithelial device) on **the** eye. The subepithelial device may comprise a wide variety of synthetic, natural, or composite polymeric... ... to separating or lifting **corneal epithelium** from the eye preferably in a substantially continuous layer, **placing a lens** or other suitable ocular or medical device beneath the epithelial **membrane**, and to the resulting structures formed by those procedures. The de-epilthelialization devices generally utilize... ... and the **corneal** stroma (**Bowman**'s membrane), specifically separating in the region of the lamina **lucida**. The **separator** or dissector may have a structure that rolls or vibrates (or both) at that cleavage... ... placement of an ocular **lens** (or other subepithelial device) on the eye. The subepithelial device **may** comprise a wide variety of synthetic, natural, or composite polymeric materials. The step of replacing... ... **epithelium** from the eye preferably in a substantially continuous layer, placing a **lens** or other **suitable ocular** or medical device beneath the epithelial membrane, and to the resulting **structures** formed by those procedures. The de-epilthelialization devices generally utilize a non-cutting separator or... ... s membrane), specifically separating in the region of the lamina lucida. The separator or dissector **may** have **a** structure that rolls or vibrates (or both) at that cleavage surface or interface during the... ... subepithelial device) on the eye. The subepithelial device may comprise a wide variety of synthetic, **natural**, or composite polymeric materials. The step of replacing epithelial tissue upon the subepithelial device or...
...
Claims:
...**epithelium** from an eye having a **cornea** with **epithelium** and a stroma, the device comprising **an** epithelial **delaminator** member configured to apply a mechanical force beneath that **epithelium** to separate the **epithelium** from...

5/5,K/6 (Item 6 from file: 350)
Derwent WPIX
(c) 2007 The Thomson Corporation. All rights reserved.
0006077388 *Drawing available*
WPI Acc no: 1992-315886/199238
Related WPI Acc No: 1988-119356; 1992-182854
XRAM Acc no: C1992-140299
XRPX Acc No: N1992-241767
Collagen-hydrogel material for promoting epithelium growth - comprises three-dimensional meshwork of hydrogel polymer, having collagen macromolecules dispersed in it, used for artificial lenses

Patent Assignee: CBS **LENS** (CBSL-N)
Inventor: CIVERCHIA L; SHEPARD D D
Patent Family (6 patents, 20 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1992014420	A1	19920903	WO 1992US1233	A	19920214	199238	B
AU 199214276	A	19920915	AU 199214276	A	19920214	199251	E
			WO 1992US1233	A	19920214		
US 5213720	A	19930525	US 1986920031	A	19861016	199322	E
			US 1989402986	A	19890901		
			US 1990624346	A	19901206		
			US 1991657091	A	19910215		
EP 571535	A1	19931201	EP 1992906982	A	19920214	199348	E
			WO 1992US1233	A	19920214		
US 5522888	A	19960604	US 1986920031	A	19861006	199628	E
			US 1989402986	A	19890901		
			US 1990624346	A	19901206		
			US 1991657091	A	19910215		
			US 199319596	A	19930219		
			US 1995444191	A	19950518		
US 5716633	A	19980210	US 1986920031	A	19861016	199813	E
			US 1989402986	A	19890901		
			US 1990624346	A	19901206		
			US 1991657091	A	19910215		
			US 199319598	A	19930219		
			US 1995475768	A	19950607		

Priority Applications (no., kind, date): US 1995475768 A 19950607; US 1995444191 A 19950518; US 199319598 A 19930219; US 199319596 A 19930219; US 1990624346 A 19901206; US 1989402986 A 19890901; US 1986920031 A 19861016; US 1986920031 A 19861006; US 1991657091 A 19910215; US 1991657000 A 19910215

Alerting Abstract WO A1

A collagen-hydrogel comprises: a) a hydrogel polymer formed by the free radical polymerisation of a hydrophilic monomer soln. gelled and crosslinked to form a 3-D polymeric meshwork for anchoring collagen; and b) a collagen macromolecule comprising a ground substance of tissue interdisposed within the polymeric meshwork forming a collagen-hydrogel for promoting epithelial cell growth.

The collagen-hydrogel when attached to **Bowmans membrane** of the **cornea** of an eye, is capable of at least one of supporting and promoting epithelial cell growth enabling the **corneal epithelium** to attach to and cover the collagen-hydrogel and regeneration of the stroma. The material has a ratio by wt. of collagen-to-hydrogel of 0.6:1000 to less than 0.6:1000 but at a level where sufficient collagen is present by wt. to promote epithelial cell growth and/or to bring about regeneration of the stroma.

USE/ADVANTAGE - A collagen-hydrogel material promotes epithelial cell growth and regeneration of the stroma, and can be used to fabricate artificial **lenses** and contact **lenses**. These artificial **lenses** can be reproduced reliably in the laboratory and are not dependent on the availability of human tissue as is the case in prior art **corneal** tissue **lenses**, the native collagen can be harvested from tissues of human **cornea**, livestock **cornea** of calfs or livestocks skins (claimed). The **lenses** are not rejected by the eye. They can be made to any selected geometrical shape or diopter power using latching, moulding or freezing processes.

Original Abstracts:

A collagen-hydrogel material, artificial **lens** (60) or contact **lens** (60) for the **eye** (40) fabricated from the collagen-hydrogel, which, when affixed to **Bowman**'s membrane (48), **promotes** and **supports** epithelial cell growth (52) enabling **corneal epithelium**, during the **healing process**, to attach to and cover the **lens** (60) and to **regenerate** the stroma (50) which grows over the edge of and attaches to the optical **lens** (60). The collagen-**hydrogel**

is a hydrogel polymer formed by the free radical polymerization of a hydrophilic monomer solution... ... shown. Also shown is an optical **lens** for the eye, fabricated from the collagen-hydrogel, **which**, when affixed to **Bowman**'s membrane, promotes and supports epithelial cell growth, **enables corneal epithelium** of the **cornea** of an eye, during **the healing** process, to attach to and cover the anterior surface of the **lens** implanting the same and to regenerate the stroma **which** grows over the edge of and attaches to the optical **lens**. Laid down in the layers of the regenerated **stroma** are new keratocytes and collagen fibial produced from keratocytes. The collagen-hydrogel is a hydrogel... ... collagen-hydrogel material or an artificial **lens** or contact **lens** produced therefrom can include a **epithelial** growth enhancer **to** promote epithelial cell growth during the healing process... ... optical **lens** for the eye, fabricated from the collagen-hydrogel, which, when affixed to **Bowman's** membrane, promotes and supports epithelial cell growth, enables **corneal epithelium** of the **cornea** of **an** eye, during the healing process, to attach **to and** cover the anterior surface of the **lens** implanting the same and to regenerate the stroma which grows over the edge **of** and attaches to the optical **lens**. Laid down in the layers of the regenerated stroma are new keratocytes and **collagen** fibial produced from keratocytes. The collagen-hydrogel is a hydrogel polymer formed by the free... ... artificial **lens** or contact **lens** produced therefrom can include a epithelial growth enhancer to promote **epithelial** cell growth **during** the healing process... ... fabricated from the collagen-hydrogel, which, when affixed to **Bowman**'s membrane, promotes and supports **epithelial** cell growth, enables **corneal epithelium** of the **cornea** of an eye, during **the** healing **process**, to attach to and cover the anterior **surface of** the **lens** implanting the same and to regenerate the stroma which grows over the edge of and attaches to the **optical lens**. Laid down in the layers of the regenerated stroma are new keratocytes and collagen fibial produced from keratocytes. **The** collagen-hydrogel is a hydrogel polymer formed by the free radical polymerization of a hydrophilic... produced therefrom can include a epithelial growth enhancer to promote epithelial cell growth during the **healing** process.
... ... 40) fabricated from the collagen-hydrogel, which, when affixed to **Bowman**'s membrane (48), promotes **and** supports epithelial cell **growth** (52) enabling **corneal epithelium**, during the healing process, to attach to and cover the **lens** (60) **and** to regenerate the stroma (50) which grows over the **edge of** and attaches to the optical **lens** (60). The collagen-hydrogel **is** a hydrogel polymer formed by the free radical polymerization of a hydrophilic monomer solution gelled and crosslinked in **the** presence of an aqueous stock solution of collagen to form a three dimensional polymeric meshwork
...

Claims:

The collagen-hydrogel when attached to **Bowmans membrane** of the **cornea** of an eye, is capable of at least one of supporting and promoting epithelial cell growth enabling the **corneal epithelium** to attach to and cover the collagen-hydrogel and regeneration of the stroma. The material... ... and regeneration of a stroma of an eye enabling **corneal epithelium** of an eye to **adhere to** and cover said collagen-hydrogel material, said collagen-hydrogel material having a ratio by weight... ... A **lens** having a predetermined shape and power which promotes and **supports** growth of **corneal** epithelial cells across the surface thereof and regeneration of the stroma, said **lens** comprisinga **lens** body having anterior and posterior surface **and** formed of a collagen-**hydrogel** capable of promoting epithelial cell growth comprisinga hydrogel polymer formed by the free radical... ... **epithelium** of the eye, said protein-hydrogel material having a ratio by weight of protein-**to**-**hydrogel** in the range of about 0.6-to-1000 and at a level wherein sufficient...

5/5,K/7 (Item 7 from file: 350)
Derwent WPIX
(c) 2007 The Thomson Corporation. All rights reserved.
0005951172 *Drawing available*
WPI Acc no: 1992-182854/199222
Related WPI Acc No: 1988-119356; 1992-315886

XRAM Acc no: C1992-083682
XRPX Acc No: N1992-138076
Locating collagen-hydrogel lens on cornea - by securing edge under annular flap formed by groove in corneal stroma
Patent Assignee: CBS **LENS** (CBSL-N)
Inventor: CIVERCHIA L; SHEPARD D D
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 5112350	A	19920512	US 1986920070	A	19861016	199222	B
			US 1990511847	A	19900406		
			US 1991657000	A	19910215		

Priority Applications (no., kind, date): US 1990511847 A 19900406; US 1986920070 A 19861016; US 1991657000 A 19910215
Alerting Abstract US A
To locate on the **cornea** an artificial **lens** of collagen-hydrogel to promote epithelial cell growth and stroma regeneration an artificial **lens** is fixed to **Bowman's membrane** over the pupillary zone after removing **corneal epithelium** from the membrane and forming an annular V-shaped groove (80) of depth less than stroma (50) thickness and dissecting the groove edge to form a tissue wing (88) under which the **lens** periphery (66) can be located.
Original Abstracts:
A method for locating on a **cornea** an artificial **lens fabricated** from a collagen-hydrogel for promoting epithelial cell growth and regeneration of the stroma is shown. The method provides for affixing an artificial **lens to** the **Bowman's** membrane **and** the **lens, during** the healing process, promotes and supports epithelial cell growth enabling **corneal epithelium of** the **cornea** of an eye to attach to and cover the anterior surface of the **lens implanting** the same and to regenerate the stroma which grows over the edge of and attaches to the optical **lens. Laid** down in the layers of the regenerated stroma are new keratocytes and collagen fibial produced... ... to produce keratocytes including collagen fibial growth. The collagen-hydrogel material or an artificial **lens or** contact **lens produced** therefrom can include a epithelial growth enhancer to promote epithelial cell growth during the healing...

5/5,K/8 (Item 8 from file: 350)
Derwent WPIX
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0004384374
WPI Acc no: 1988-119356/198817
Related WPI Acc No: 1992-182854; 1992-315886
XRAM Acc no: C1988-053540
XRPX Acc No: N1988-090684
Collagen hydrogel for promoting epithelial cell growth - useful for prodn. of artificial or contact lenses to promote healing of corneal epithelium during implantations
Patent Assignee: CBS **LENS** (CBSL-N)
Inventor: CIVERCHIA L; SHEPARD D; SHEPARD D D
Patent Family (4 patents, 13 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1988002622	A	19880421	WO 1987US2645	A	19871014	198817	B
US 4983181	A	19910108	US 1986920031	A	19861016	199105	E
			US 1986920070	A	19861016		
			US 1989402986	A	19890901		
US 4994081	A	19910219	US 1986920031	A	19861016	199110	E
			US 1986920070	A	19861016		
			US 1990511847	A	19900416		
US 5114627	A	19920519	US 1986920031	A	19861016	199223	E

			US 1989402986	A	19890901		
			US 1990624346	A	19901206		

Priority Applications (no., kind, date): US 1990624346 A 19901206; US 1990511847 A 19900416; US 1989402986 A 19890901; US 1986920070 A 19861016; US 1986920031 A 19861016

Alerting Abstract WO A

Collagen-hydrogel for promoting epithelial cell growth comprises (a) a hydrogel polymer formed by the free-radical polymerisation of a hydrophilic monomer soln. gelled and crosslinked to form a 3-dimensional polymeric meshwork for anchoring macromolecules; and (b) macromolecules comprising a constituent of a ground substance of tissue, interdispersed in the polymeric network to form a collagen -hydrogel for promoting epithelial cell growth.

The collagen-hydrogel, when attached to **Bowman's membrane** of the **cornea** of an eye, is capable of supporting and promoting epithelial cells growth so that the **corneal epithelium** can attach to and cover the collagen-hydrogel.

USE/ADVANTAGE - The collagen hydrogel promotes epithelial cell growth and may be used in the prodn. of artificial or contact **lenses** to promote healing of **corneal epithelium** during implantations.

Equivalent Alerting Abstract ...substance of tissues interdisposed within meshwork to promote epithelial cell growth attaching such cells to **Bowman's membrane** of **cornea** of eye and covering and adhering to the hydrogel. Pref hydrophilic monomer is hydroxyethylmethacrylate and cross-linking agent is ethyleneglycol methacrylate. Contact **lens** can be formed from above hydrogel compsn and positioned over pupil of eye and affixed to **Bowman's membrane**, and its anterior and posterior surfaces covered with growth of **corneal** epithelial cells... ...ADVANTAGE - Permanent artificial **lens** which resists rejection... ...Optical **lens** of predetermined geometric shape and power is on the **cornea**. **Lens** comprises an outer part contg... ...an outer edge, posterior- and anterior-surfaces. **Lens** is formed from a hydrogel polymer formed by free radical polymerisation of a hydrophilic monomer... ...USE - For promoting epithelial cell growth when contiguous to the **Bowman's membrane** and **corneal epithelium** of **cornea** of an eye.

Original Abstracts:

promoting epithelial cell growth is shown. Also shown is an optical **lens** for the eye, **fabricated** from the collagen-hydrogel, which, when affixed to **Bowman's** membrane, promotes **and** supports **epithelial** cells growth and enables **corneal epithelium** of the **cornea of** an eye, during the healing process, to attach to and cover the anterior surface of the **lens** implanting the same. **The** collagen-hydrogel is a hydrogel polymer formed by the free radical polymerization of a hydrophilic... ... a collagen-hydrogel for promoting epithelial cell growth. A collagen-hydrogel **lens** fabricated from the **collagen**-hydrogel, when affixed to Bownman'membrane of the **cornea** of an eye by suturing or... ... capable of supporting and promoting cell growth of epithelial cells enabling **corneal epithelium** to attach **to and** cover the collagen-hydrogel **lens**. An artificial **lens or** contact **lens produced** from the **collagen**-hydrogel, during the healing process, is capable of eliminating rejection of and promoting the implantation of the artificial **lens** or contact **lens between Bowman's membrane** and **corneal epithelium**.

... ... locating on the **cornea** an optical **lens** having a preselected geometric shape and power wherein **the** optical **lens** is formed of a collagen-hydrogel for promoting **epithelial** cell growth is shown. The method comprises the steps of: removing from **Bowman's** membrane over the area of the pupillary **zone** of **the** eye a portion of the **corneal epithelium**; forming on **Bowman's** membrane a "V" **shaped annular** groove having **a** diameter **substantially** equal to the maximum geometrical dimensions of the optical **lens** and a preselected depth; dissecting the peripheral edge **of** the groove forming a wing of **corneal** tissue having a preselected length; placing the posterior surface of the optical **lens** on the anterior surface of **Bowman's** membrane **and** positioning the outer edge of **the** optical **lens** under the **corneal** wing, and affixing the optical **lens** to **Bowman's** membrane over the pupillary zone **of** the **eye** to **maintain** the same on the **cornea** with the **corneal** wing overlying the edge of the optical **lens**. With the edge of the **lens** in contact **with corneal** epithelim, the collagen-hydrogel **for** promoting epithelial cell growth interacts with epithelial cells during a healing period to promote growth... ... the anterior surface of the optical **lens**

implanting the same under **corneal epithelium**.
... ... geometric shape and power. The optical **lens** (60) is formed of a collagen-hydrogel for **promoting** epithelial cell growth.
The optical **lens** (60) when affixed **to Bowman**'s membrane (40), promotes and supports epithelial cell (52) growth and enables **corneal epithelium** (42) **of** the **cornea** of an **eye**, during **the** healing process, to attach to and cover the anterior surface (**70**) **of** the **lens** (60) implanting the same. The collagen-hydrogel is a hydrogel polymer formed by the free radical polymerization of a hydrophilic **monomer** solution gelled and crosslinked in the presence of an aqueous solution of macromolecules to form

7/5,K/1 (Item 1 from file: 350)
Derwent WPIX
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0007311249 *Drawing available*
WPI Acc no: 1995-373121/199548
Related WPI Acc No: 1996-208538; 1996-455033; 1998-129731; 2001-059787; 2002-381825; 2003-688562
XRPX Acc No: N1995-275163
Surgical laser evaluation method for ophthalmological surgery - involves making first and second vad keratograph and evaluating laser beam performance based on comparison of first and second vad keratograph
Patent Assignee: O'DONNELL F E (ODON-I)
Inventor: O'DONNELL F E
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 5460627	A	19951024	US 199355578	A	19930503	199548	B
			US 1994269139	A	19940630		

Priority Applications (no., kind, date): US 199355578 A 19930503; US 1994269139 A 19940630
Alerting Abstract US A
The method involves performing a first Placido-disc video keratoscope procedure on a substrate to determine surface contour of the substrate. A first video keratograph is made and a laser beam is applied to the substrate. The substrate is ablated with the laser beam. Visualization of the substrate is enhanced by applying a fine hydrophobic lubricant to the substrate.
A second Placido-disc video keratoscope procedure is performed on the substrate to determine a second surface contour of the substrate after ablation. A second video keratograph is made and the laser beam performance is evaluated based upon a comparison of the second and the first video keratographs.
ADVANTAGE - Prevents unwanted **lens** effect. Quantifies change in optic curvature of intraocular **lens** implant before and after treatment to alter refractive power. Determines effects of laser beam on artificial **cornea**. Measures topography of **deepithelialised cornea** before and after laser ablation of **cornea**. Allows confirmation of uniform laser beam.
Original Abstracts:
...by the laser. The substrate can be calibration block, an intraoccular **lens** implant, a contact **lens**, an artificial **cornea**, **or cornea**.

INVENTORS

[File 155] **MEDLINE(R)** 1950-2007/Feb 27
[File 5] **Biosis Previews(R)** 1926-2007/Feb W4
[File 73] **EMBASE** 1974-2007/Feb 28
[File 35] **Dissertation Abs Online** 1861-2007/Feb
[File 65] **Inside Conferences** 1993-2007/Mar 01

Set	Items	Description
S1	77	S AU=(MARMO C? OR MARMO, C?)
S2	347	S AU=(BACK A? OR BACK, A?)
S3	0	S S1 AND S2
S4	144	S CORNEAL()EPITHELIUM AND BOWMAN? ?(1W)MEMBRANE
S5	0	S S1:S2 AND S4
S6	2209	S EPITHELIUM AND BOWMAN? ?
S7	0	S S1:S2 AND S6
S8	1	S ANTERIOR()ELASTIC()LAMINA
S9	0	S S1:S2 AND S8

[File 350] **Derwent WPIX** 1963-2006/UD=200714
[File 347] **JAPIO** Dec 1976-2006/Oct(Updated 070201)

Set	Items	Description
S1	7	S AU=(MARMO C? OR MARMO, C?)
S2	35	S AU=(BACK A? OR BACK, A?)
S3	**1**	**S S1 AND S2**
S4	15	S CORNEAL()EPITHELIUM AND BOWMAN? ?(1W)MEMBRANE
S5	1	S S1:S2 AND S4
S6	0	S S5 NOT S3

3/5/1 (Item 1 from file: 350)
Derwent WPIX
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0014144596 *Drawing available*
WPI Acc no: 2004-329380/200430
XRAM Acc no: C2004-124647
XRPX Acc No: N2004-262879
Corneal appliance, e.g. corneal onlay for vision correction, includes lens body placed on deepithelialized cornea of eye of patient, and epithelial cells derived from cultured stem cells
Patent Assignee: OCULAR SCI INC (OCUL-N); BACK A (BACK-I); MARMO J C (MARM-I)
Inventor: **BACK A; MARMO C J**; MARMO J C
Patent Family (11 patents, 106 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2004024035	A1	20040325	WO 2003US28657	A	20030902	200430	B
AU 2003270593	A1	20040430	AU 2003270593	A	20030902	200462	E
US 20050080484	A1	20050414	US 2002410837	P	20020913	200526	E
			US 2003464004	P	20030418		
			US 2003464590	P	20030421		
			US 2003661400	A	20030912		
EP 1549255	A1	20050706	EP 2003752298	A	20030902	200544	E
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Alerting Abstract WO A1

NOVELTY - A corneal appliance comprises a lens body (40) structured to be placed on a deepithelialized cornea of an eye of a patient, and epithelial cells (70) derived from cultured stem cells.

DESCRIPTION - A corneal appliance comprises a lens body having an anterior surface, a posterior surface, and a peripheral edge at a juncture of the anterior and posterior surfaces, and being structured to be placed on a deepithelialized cornea of an eye of a patient; and epithelial cells fixedly positioned on the anterior surface of the lens body before the body is placed on the deepithelialized cornea of the eye, the epithelial cells are derived from cultured stem cells. An INDEPENDENT CLAIM is also included for a method of manufacturing a corneal appliance comprising culturing stem cells until a fraction of the stem cells have differentiated into corneal epithelial cells, and applying cells on an anterior surface of a lens body to form a layer of epithelial cells that are fixedly secured on the anterior surface of the lens body before the lens body is placed on the eye.

USE - The invention is used as, e.g. corneal onlay used for vision correction (claimed).

ADVANTAGE - The invention improves myopia, hyperopia, and astigmatism in a subject.

DESCRIPTION OF DRAWINGS - The figure shows a diagram of a front plan view of the corneal appliance.

40 Lens body

70 Epithelial cells

Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61F-002/14			Main		"Version 7"
A61F-009/007			Secondary		"Version 7
A61F-0002/14	A	I	L	B	20060101
A61F-0002/14	A	I		R	20060101
A61F-0009/00	A	I		R	20060101
A61F-0009/013	A	I		R	20060101
A61L-0027/00	A	I	F	B	20060101
A61L-0027/38	A	I		R	20060101
A61F-0002/14	A	I	F	B	20060101
A61F-0002/14	C	I		R	20060101
A61F-0009/00	C	I		R	20060101
A61F-0009/007	C	I		R	20060101
A61L-0027/00	C	I		R	20060101

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DWPI Class: A96; D22; P32; P34

Manual Codes (CPI/A-N): A12-V02A; D09-C01A